

# **EXHIBIT R**

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## Hypertext Transfer Protocol -- HTTP/1.0

### Status of This Memo

This memo provides information for the Internet community. This memo does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

### IESG Note:

The IESG has concerns about this protocol, and expects this document to be replaced relatively soon by a standards track document.

### Abstract

The Hypertext Transfer Protocol (HTTP) is an application-level protocol with the lightness and speed necessary for distributed, collaborative, hypermedia information systems. It is a generic, stateless, object-oriented protocol which can be used for many tasks, such as name servers and distributed object management systems, through extension of its request methods (commands). A feature of HTTP is the typing of data representation, allowing systems to be built independently of the data being transferred.

HTTP has been in use by the World-Wide Web global information initiative since 1990. This specification reflects common usage of the protocol referred to as "HTTP/1.0".

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cached copy of an earlier response from O (via C) for a request which has not been cached by UA or A.

```

      request chain ----->
UA -----v----- A -----v----- B - - - - - C - - - - - O
<----- response chain

```

Not all responses are cachable, and some requests may contain modifiers which place special requirements on cache behavior. Some HTTP/1.0 applications use heuristics to describe what is or is not a "cachable" response, but these rules are not standardized.

On the Internet, HTTP communication generally takes place over TCP/IP connections. The default port is TCP 80 [15], but other ports can be used. This does not preclude HTTP from being implemented on top of any other protocol on the Internet, or on other networks. HTTP only presumes a reliable transport; any protocol that provides such guarantees can be used, and the mapping of the HTTP/1.0 request and response structures onto the transport data units of the protocol in question is outside the scope of this specification.

Except for experimental applications, current practice requires that the connection be established by the client prior to each request and closed by the server after sending the response. Both clients and servers should be aware that either party may close the connection prematurely, due to user action, automated time-out, or program failure, and should handle such closing in a predictable fashion. In any case, the closing of the connection by either or both parties always terminates the current request, regardless of its status.

#### 1.4 HTTP and MIME

HTTP/1.0 uses many of the constructs defined for MIME, as defined in RFC 1521 [5]. Appendix C describes the ways in which the context of HTTP allows for different use of Internet Media Types than is typically found in Internet mail, and gives the rationale for those differences.

## 2. Notational Conventions and Generic Grammar

### 2.1 Augmented BNF

All of the mechanisms specified in this document are described in both prose and an augmented Backus-Naur Form (BNF) similar to that used by RFC 822 [7]. Implementors will need to be familiar with the notation in order to understand this specification. The augmented BNF includes the following constructs: